

REMARKS

This Amendment is made in response to the Final Action mailed June 5, 2009. Claims 2-4, 6, 7 and 10 have been cancelled. Claims 1 and 5 have been amended. Accordingly, claims 1, 5, 8, 9 and 11 remain pending in this application. The specification has been amended in order to insert the appropriate headings as suggested by the Examiner. Applicants submit that the proposed amendments place this application into condition for allowance, or, into better condition for appeal. Reconsideration and withdrawal of the objections to and rejections of this application are respectfully requested in view of the above amendments, and further, in view of the following remarks.

Preliminarily, Applicants note that independent process claim 1 and apparatus claim 5 have been amended in order to clarify that the invention relates to a construction of mould in which (1) the cavity defines the shape of transverse ribs; (2) the flow of fluid elastomer is such that it flows along the parts of the cavity that define the shape of the ribs; (3) the fluid elastomer flows inwardly from opposite sides to meet in the middle and potentially trap a bubble of air which would otherwise form a void; and (4) the split line is aligned across the parts of the mould cavity which define the ribs. Support for this amendment can be found in the claims and specification as originally filed.

Claims 1 and 9 have been rejected under 35 U.S.C. §103(a), as being unpatentable over Leversby WO 94/05183, in view of U.S. Patent 6,514,445, granted February 4, 2003, to Cann et al. ("Cann"), Steinebrunner DE-A-10104034, U.S. Patent 4,909,972, granted March 20, 1990, to Britz ("Britz") and Davies WO-A-04/041025. Reconsideration and withdrawal of the rejection are respectfully requested.

Concerning process claim 1, the allegation is that Leversby teaches dual component toothbrush injection moulding using two mould blocks, and Cann teaches such two component moulding in which the second component is an elastomer. The Action alleges further that although Leversby plus Cann do not teach venting air from the mould, this is taught by Steinebrunner, thereby concluding that it is obvious to use such venting in the process taught by Leversby plus Cann. However, this combination does not teach the use of a split mould block to vent the air, so Britz, which teaches the use of a split mould block, is argued to make it obvious to use a similar split line as an air vent in the present process. Analogous allegations based on the same art and arguments are directed against the apparatus claim 5.

With regard to process claims 9 and 11, the Action alleges obviousness over Cann and U.S. Patent 6,306,238, issued October 23, 2001, to Tornainen et al. ("Tornainen"), respectively, as teaching the claimed temperatures.

Referring to the Action's allegations, neither Leversby, Cann nor Steinebrunner teach a longitudinally split mould block, as acknowledged by the Examiner. Davies teaches a toothbrush head with flexible elastomer ribs, but with no teaching as to how such elastomer ribs might be made in an injection moulding process. The paragraph bridging page 4 and 5 of Davies teaches that the elastomer material may be "directed by way of channels through the material making the rest of the brush", i.e., through the plastics material of the brush. This is a process distinct from that of the present invention in which the elastomer material is directed over the surface of the pre-formed plastic part. The method disclosed in Davies of channels through the plastic appears to allow the possibility of directing the flow of elastomer via these channels, for example being directed outwardly from the plastic material into the parts of the cavity defining the shape of the ribs. However, Davies does not envisage the air bubble trapping problem addressed by the present invention and appears to point to other solutions than the present claimed split mould block.

Britz appears to disclose in Fig. 5, a mould block which is longitudinally split at 54 to allow venting of air and gasses produced when the foaming composition introduced into the mould cavity expands. However, unlike the present invention, there is no injection of composition into the mould from an injection port from which the composition is caused to fill an intricately shaped cavity at the high speeds typically used for injection moulding. Instead, in the mould of Britz the composition is poured (e.g., col. 5, line 65 - col. 6, line 7) into the open mould, which is then closed and the composition allowed to foam and slowly expand over a period of several minutes (e.g., col. 7, line 3-10) while the mould is typically "tapped with a mallet for about 2 minutes to remove air bubbles". In Britz a bicycle tire is made, which appears to be a simple ring without the intricate re-entrant cavities of the present toothbrush mould.

In summary, the process of Davies in which a toothbrush with ribs is made, does not envisage the problem addressed by the present invention of flow patterns during injection moulding of an intricately shaped product which can trap bubbles, and appears to point to ways of moulding such ribs which do not result in trapping air. The process of Britz is used to make a moulded product of a simple ring shape without an intricate cavity. Therefore, there is no reason why the skilled reader would apply the split mould block of Britz to a process or mould for making toothbrushes of the type claimed in amended claims 1 and 5.

Concerning the dependent process claims 9 and 11, the independent claims are inventive as discussed above. Therefore claims 9 and 11 are non obvious by dependency.

The Examiner's rejection of the previous response appears to be centered on the allegation in paragraph 22 that "the applicant has recognized another advantage that would flow naturally from following the suggestion of the prior art." Applicants respectfully disagree. It has been explained above that none of Leversby, Cann, Steinebrunner or Davies teach or suggest the flow problems inherent in injection moulding elastomer ribs on a toothbrush head as experienced in an injection mould of the type defined in the present claims. Further, Davies points to different solutions. Britz does not address this problem either as Britz sets out only to manufacture a simple foamed polyurethane ring, therefore there is no reason from Britz to apply the split block solution to the problem dealt with by the claimed invention.

Accordingly, Applicants submit that a *prima facie* case of obviousness has not been established by this combination of documents. Favorable reconsideration of the rejections under Section 103(a) is requested.

In view of the foregoing, favorable reconsideration of claims 1, 5, 8, 9 and 11 and allowance of this application are earnestly solicited.

Respectfully submitted,



Nora Stein-Fernandez
Attorney for Applicants
Registration No. 36,689

GLAXOSMITHKLINE
Corporate Intellectual Property - UW2220
P.O. Box 1539
King of Prussia, PA 19406-0939
Phone (610) 270-5044
Facsimile (610) 270-5090